



Small Trees for Fall Splendor

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Many cities, municipalities, utility companies and homeowners incur significant costs each year for maintenance or removal of large trees used in small urban areas. A preventative solution to the dilemma is to use small trees that will remain in scale with smaller urban landscapes and not interfere with power lines and in-ground utilities (i.e. cable, sewer, and telephone). Smaller trees will not provide the shade of large, dense-canopy trees, but are especially suited for courtyards, patios or framing a house.

Small trees are considered to mature in height at about 25 to 35 feet. No strict rule exists as to what constitutes a small tree. In fact, several of the plants listed here could be considered large shrubs, but with proper pruning and removal of lower stems, the plants develop into handsome small trees. Trees are typically defined as a single trunk group, but can easily include multi-trunk selections. Multi-trunk trees can fulfill several purposes in a landscape, such as a planting baffle or partial screen.

Small trees in urban landscapes can offer many showy characteristics that are often desired. Seasonal characteristics such as flowering, fruiting and fall color, along with bark color and texture and canopy form, are very important considerations when choosing trees for the urban or rural landscape.

Growth habit and form are important considerations

when choosing trees. Nursery producers and plant breeders select many cultivars based on the canopy form. Forms can be fastigate or upright (Lombardy poplar), upright-spreading (American elm), horizontal-spreading (Southern magnolia), or weeping (Weeping willow). Choosing the correct tree form can enhance a landscape site. For instance, a weeping or horizontal-spreading tree serves as a great specimen plant, but may be detrimental to the landscape if planted too close to a structure.

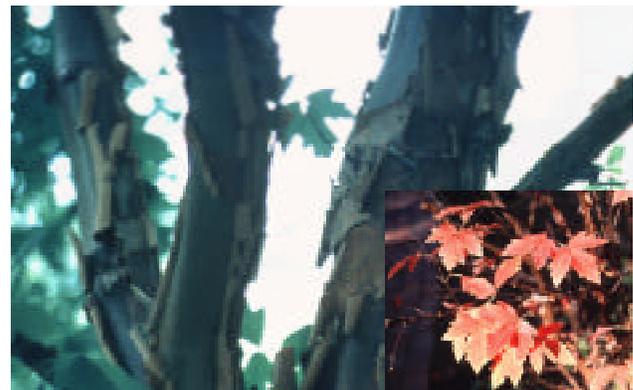
Many utility companies consider small trees low maintenance. Some pruning may be necessary to develop the desired form (single or multi-trunk), but little pruning is needed to keep the height from interfering with utility lines. Most small trees do not develop invasive root systems that can interfere with in-ground utilities. Many small trees are tolerant of a wide range of climatic conditions, soil types and light exposure ranging from full sun to partial shade.

Fall color can be planned for the landscape, just like spring and summer flowering or growth habit. In Tennessee, fall color starts developing on some species as early as September, while some species will not develop color until mid to late November. This striking phenomenon does not occur everywhere in the world. The eastern United States is fortunate to have a diverse flora that displays many leaf colors of reds, yellows and oranges in the landscape.

Pacific Sunset Maple, a hybrid Truncate maple, offers spectacular fall leaf color.



J. Frank Schmidt Nursery



Donna Fare

The cinnamon colored exfoliating bark makes Paperbark maple an attractive addition to the landscape after leaf drop.

Recommended Small Trees with Good Fall Color

| Botanical Name | Common Name | Height Spread | Fall Color | Comments |
|--|--|------------------|----------------------------|---|
| <i>Acer buergeranum</i> | Trident Maple | 20-30' 20-30' | Yellow, orange, red | Fall color can vary with individual trees. Drought tolerant. Can be grown as a single or multi-trunk tree. Round canopy. |
| <i>Acer griseum</i> | Paperbark Maple | 20-30' 20' | Red, orange and yellow | Few plants offer the year-around beauty of this tree. The cinnamon-brown exfoliating bark is attractive all year. Slow growing. |
| <i>Acer griseum x A. maximowiczianum</i> | Girard Maple | 25-30' 30' | Red | Finely exfoliating bark; faster growth rate than Paperbark Maple. One of the best tri-lobate maples. |
| <i>Acer palmatum</i> <i>A. palmatum dissectum</i> | Japanese Maple | 15-20' 15-20' | Red to maroon | An excellent accent or specimen tree, but dissectum types are very slow growing. Many red and purple leaf selections are available. Needs good drainage and partial shade from western sun. |
| <i>Acer tataricum ginnala</i> | Tatarian Maple | 20' 25' | Red | Multi-stem and broad spreading, bright red samaras in summer. Cultivars 'Embers', 'Flame', 'Red Wing' and 'Summer Splendor' provide good fall color. |
| <i>Acer triflorum</i> | Three Flower Maple | 25' 30' | Brilliant orange-red | Spreading canopy form, but slow growing. Exfoliating buff-colored bark adds winter interest. Good understory tree. |
| <i>Acer truncatum x A. platanoides</i> | Shantung Maple | 30' 25' | Red | 'Norwegian Sunset' and 'Pacific Sunset' are hybrid cultivars with good red fall color and more heat tolerance than the species Truncate Maple. |
| <i>Amelanchier arborea</i> | Serviceberry | 20-30' 10-15' | Red to orange | Native. Full sun to light shade. Flowers in spring prior to leafing out. Edible fruit ripens in June. Bark is smooth gray and attractive in winter. <i>Amelanchier x grandiflora</i> 'Autumn Brilliance', 'Princess Diana' and 'Cole's Select' are good selections. |
| <i>Asimina triloba</i> | Paw Paw | 20-25' 15-20' | Yellow | Native. Round canopy form; can be grown as a single or multi-trunk. Edible fruits. Few insect or disease problems. |
| <i>Carpinus caroliniana</i> | American Hornbeam | 25-30' 20-25' | Yellow, orange, or scarlet | Native. Grown as a single or multi-trunk tree. Bark is smooth and irregularly fluted. Good understory tree. Can tolerate wet sites. |
| <i>Cornus florida</i> | Flowering Dogwood | 15-25' 15-25' | Red to maroon | Native. Can be planted as an understory tree or in full sun. Blooms in early spring before leafing out. Showy flower bracts can be white, pink or red. A couple of white double forms are in the trade. Many cultivars are available. |
| <i>Cornus kousa</i> | Chinese Dogwood | 15-25' 15-20' | Red to maroon | Blooms after the leaves have unfurled in spring. Attractive exfoliating bark. Raspberry-like red fruit is very showy in late summer. A group of hybrids called the Stellar series offer a selection of canopy forms and flowering characteristics. |
| <i>Cotinus coggygria</i> 'Royal Purple' | Smoke Tree | 10-15' 10-15' | Purplish | Large shrub or small multi-trunk tree. Blooms in June-July with hair-like fragments on portions of the inflorescence (flower structure) causing smoke-like appearance in August-September. Several other cultivars available. |
| <i>Cotinus obovatus</i> | American Smoke Tree | 20-30' 25' | Yellow – orange | A handsome native tree, with some difficulty in transplanting. Summer flower not as showy as <i>C. coggygria</i> . Tolerant of drought and limestone soils. |
| <i>Franklinia alatahama</i> | Franklin Tree | 25-30' 10-15' | Orange to red | Native. An excellent tree grown in deep, moist, slightly acid soil. Prefers sandy soil, not heavy clay. Needs partial shade from western sun, and irrigation. Can be difficult to transplant. |
| <i>Halesia carolina</i> <i>H. monticola</i> | Carolina Silverbell Mountain Silverbell | 30-40' 20-25' | Yellow | Native. Leaf color is greenish-yellow in summer, and turns yellow in early fall. White bell-shaped flowers are showy in April to early May. Can function as a shade tree and flowering tree. |

Recommended Small Trees with Good Fall Color

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| <i>Hamamelis x intermedia</i> | Witchhazel | 15-20' 10-15' | Orange-yellow, red- maroon | Hybrids of <i>H. japonica</i> and <i>H. mollis</i> . Form is rather loose and upright. Flowers in January to mid-February. Great addition for winter color in the landscape. Good cultivars include 'Arnold's Promise', 'Jelena' and 'Pallida'. |
| <i>Lagerstroemia indica</i> | Crapemyrtle | 10-20' 10-15' | Yellow, orange, red | Grown as a single trunk or more commonly a multi-trunk tree. Flower panicles provide a lot of color during summer with colors ranging from white, pink, red and lavender. Can be susceptible to winter injury in East Tennessee. |
| <i>Lagerstroemia fauriei</i> | Fauriei Crapemyrtle | 15-20' 10-15' | Red-orange | Flowers in summer with large white flower panicles. Cinnamon-colored bark is showy all year. The cultivar 'Fantasy' is one of the largest growing selections. Many hybrid cultivars of <i>L. indica x L. fauriei</i> are available with an array of flower colors. Can be susceptible to winter injury in East Tennessee. |
| <i>Magnolia x 'Galaxy'</i> | Galaxy Magnolia | 25-30' 20' | Yellow | Dark pink to reddish flowers in late April. In most cases, blooms late enough to escape damage by late spring frosts. Straight trunk; oval crown. |
| <i>Ostrya virginiana</i> | Eastern Hophornbeam | 25-35' 20-30' | Yellow | Native. Good understory tree. Can be grown as a multi-trunk tree. Fruit are 1/3 inch, greenish-white nutlets hanging in hop-like bunches. Can tolerate drought conditions. |
| <i>Oxydendron arboreum</i> | Sourwood | 30-40' 15-20' | Red | Native. An excellent small tree that flowers in summer with long, white, drooping flower panicles. The flowers form on the bottom of the panicle and the white fruit capsules form on the top of the panicle. Grown as a single trunk, but more often as a multi-trunk tree. |
| <i>Parrotia persica</i> | Persian Parrotia | 20-30' 15-30' | Yellow-orange to scarlet | Use in full-sun areas, with well-drained soil. Flowers in March, with non-descript petals, but showy red stamens. Bark exfoliates to reveal mosaic colors of green, white, brown and gray. |
| <i>Prunus virginiana 'Canada Red'</i> | Chokeberry | 25' 15-20' | Red | Native. A red-leaved selection that holds the dark-red leaf color through the summer and into fall. Fruits are edible and can be used for jellies and jams. |
| <i>Prunus x 'Okame'</i> | Okame Cherry | 20-30' 15-20' | Orange-red | Early-spring flowering with pink petals. Growth habit distinctively upright. |
| <i>Pyrus calleryana 'Capitol'</i> | Capitol Pear | 25-30' 10-12' | Red-maroon | An introduction from the National Arboretum. Very columnar canopy form. Provides all the aesthetics as a Bradford Pear but can be used in small areas or as a street tree. |
| <i>Rhus chinensis</i> | Chinese Sumac | 10-15' 10-15' | Red-orange | Tree form with white flowers in August-September. 'September Beauty' is a superior selection. |
| <i>Rhus copallina</i> <i>R. glabra</i> <i>R. typhina</i> | Sumac | 10-25' 15-25' | Orange, red, and maroon | Prefers full sun. If root suckers are cut, individual trees can be grown as a small, single-trunk tree with a loose, round-headed canopy. Nice plants for a sunny border or hedge. These species are not poisonous to humans. |
| <i>Stewartia ovata</i> | Mountain Stewartia | 10-15' 10-15' | Orange-red | Native. Can be bushy in appearance. Large, white flowers 3" across in June-July. Mottled, exfoliating bark. Plant in moist, well-drained, high-organic soils in full sun to partial shade. Bark is showy in winter. Plants need shading during hot, dry weather. |
| <i>Stewartia pseudocamellia</i> | Japanese Stewartia | 20-40' 15-20' | Yellow, red, and purple | A magnificent small tree with dark green leaves. Fall color is superior to Mountain Stewartia. Small, white flowers are showy in July. Mature bark has exfoliating fragments that reveal spectacular mottled colors. |
| <i>Styrax americanus</i> | American Snowbell | 6-15' 5-8' | Red-orange | Native. Needs moist, acid, sandy soils. Requires adequate moisture in dry weather. Full sun to light shade. White, fragrant flowers in April. Dark, handsome bark. |

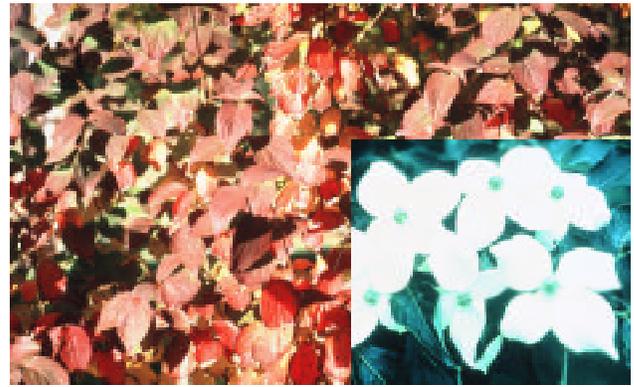


Carol Reese

Sourwood is one of the earliest native trees to develop fall leaf color.

Fall color development depends on a number of factors, such as temperature, sunlight, rainfall and plant variety selection. Some plants develop good fall color every year, while other trees have the potential but do not develop color consistently. Late summer days that are warm and clear with cooler night-time temperatures are ideal conditions for fall color development. Trees that develop yellow fall color contain yellow pigments in the leaves. In summer, chlorophyll, the green color manufactured by plants when exposed to sunlight, masks the yellow color. In late summer or early fall, chlorophyll production ceases and existing chlorophyll is destroyed. The yellow-to-orange carotenoid pigments in the chloroplasts are unmasked and yellow fall color is present. In some years, the yellow is quite brilliant with some tree species, while in other years the leaves turn directly from green to brown.

The red leaf color develops from a pigment called anthocyanin. This pigment is not present in the foliage and must be manufactured from an accumulation of sugars and tannins in the leaves. Not all trees have the capability to produce anthocyanin, so their fall leaf color is yellowish or nondescript. Two factors are necessary for good anthocyanin production: 1) bright, warm sunny days in the early fall, resulting in the manufacture of an abundance of sugars in the leaves, followed by 2) cool night-time temperatures in the mid-40s or lower. This sequence of warm days



Donna Fare

Kousa dogwood, *Cornus kousa*, flowers after the foliage has unfurled in the spring. Fall leaf color is mostly red.

and cool nights traps the sugars and other materials in the leaves rather than translocating them to other parts of the plant. This accumulation results in anthocyanin manufacture, which is revealed as red fall leaf color. Some plants are very sensitive to this process. This results in one side of the plant that is exposed to strong light developing red leaf color, while the opposite side is still yellow or green.

In some years, fall leaf color is dull. Dull leaf coloration may be attributed to warm fall temperatures, cloudy days and inadequate summer rainfall. In this instance, less sugar is developed in the leaves, with even less being trapped. Trees may display much in the way of beauty, but the colors are not as vivid.

Cultivated trees selected by nursery producers and arboreturns typically have consistent fall color regardless of the fluctuating weather conditions. The best landscape trees are uniform from tree to tree and have a predictable nature. While there are many small trees to choose from, the ones mentioned in this publication are truly glorious in the fall with their color splendor and can adapt to the diverse soil and climatic conditions present in Tennessee.

Reference:

Dirr, Michael A. 1990. Manual of Landscape Woody Landscape Plants: Their identification ornamental characteristics, culture, propagation and uses. 4th ed. Stipes Publishing Company, Champaign, Ill.

Appreciation is expressed to Robin Young for design of this publication.
SP 514-15M-7/98

R12-4910-11-001-99

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Printing for this publication was funded by the USDA Forest Service through a grant with the Tennessee Department of Agriculture, Division of Forestry. The *Trees for Tennessee Landscapes* series is sponsored by the Tennessee Urban Forestry Council.

